

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC**

In the Matter of	)	
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51

**COMMENTS OF CLEARWIRE CORPORATION**

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## EXECUTIVE SUMMARY

Clearwire Corporation, on behalf of itself and its license-holding and service-providing subsidiaries (collectively “Clearwire”), hereby files these comments in response to the Federal Communications Commission’s (“Commission”) Notice of Inquiry, which seeks comment concerning the development of a National Broadband Plan. Clearwire commends the Commission for its comprehensive notice, as the timing of this important undertaking occurs at a transformational moment, when the game-changing power of the Internet is converging with the arrival of fourth-generation (“4G”) mobile broadband technology. Joining the critical element of mobility with high-speed Internet access promises to offer cost-efficient and effective solutions for consumers and community institutions, public safety personnel, educators, health professionals and governments. These groups have been clamoring for 4G mobile broadband solutions to their communications needs that cannot be met by wired technologies or earlier generations of mobile broadband.

Fostering an environment that is conducive to the development of a widespread, 4G mobile broadband infrastructure should be a principal goal of the National Broadband Plan. To meet that goal, the Commission should separately define and assess the availability of mobile broadband and promote its greater deployment by instituting steps that help reduce the cost of market entry, network deployment and continuing operations. This includes, among other steps described in these comments, recognizing the critical role of “middle mile” or backhaul facilities to any successful network deployment and correcting the anomalies that plague the middle mile market, and requiring all broadband providers to adhere to the Commission’s *Internet Policy Statement* and permit customer-driven decisions regarding devices and applications.

## INTRODUCTION

Clearwire, hereby files these comments in response to the Commission's Notice of Inquiry, which seeks comment concerning the development of a National Broadband Plan that will "enable the build-out and utilization of high-speed broadband infrastructure."<sup>1</sup> Clearwire commends the Commission for its comprehensive notice soliciting comments on the elements that should be included in the plan. The timing of this important undertaking is fortuitous, since it occurs at a transformational moment when the game-changing power of the Internet is converging with the arrival of 4G mobile broadband technology. Melding the critical element of mobility with high-speed Internet access promises to offer cost-efficient and effective solutions for consumers and community institutions that desire or require untethered Internet connections. Public safety personnel, educators, health professionals and governments all have been clamoring for 4G mobile broadband solutions to vexing communications needs that simply cannot be addressed by wired technologies or earlier generations of mobile broadband. In addition, 4G mobile broadband has the ability to reach unserved and underserved communities in a speedy, cost-efficient manner that wired technologies typically cannot match.

Consequently, fostering an environment that is conducive to the development of a widespread, 4G mobile broadband infrastructure should be a principal goal of the National Broadband Plan. To meet that goal, the Commission should separately define and assess the availability of mobile broadband and promote its greater deployment by instituting steps that help reduce the cost of market entry, network deployment and continuing operations. This includes recognizing the critical role of "middle mile" or backhaul facilities to any successful network deployment and correcting the anomalies that plague the middle mile marketplace

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<sup>1</sup> *A National Broadband Plan for Our Future*, GN Docket No. 09-51, Notice of Inquiry (rel. April 8, 2009) at ¶ 1 ("NOI").

today. The Commission also should use the National Broadband Plan as a catalyst for greater innovation and customer choice by requiring all broadband providers to adhere to the Commission's *Internet Policy Statement*<sup>2</sup> and permit customer-driven decisions regarding devices and applications.

## **I. BACKGROUND**

Clearwire builds and operates next generation wireless broadband networks that provide entire communities with a robust suite of advanced high-speed Internet services.<sup>3</sup> Clearwire is building the first, nationwide 4G mobile Internet wireless network, bringing together an unprecedented combination of speed and mobility. Clearwire's strategic investors include Intel Capital, Comcast, Sprint, Google, Time Warner Cable and Bright House Networks. Clearwire operates networks in 51 markets in the United States and Europe covering approximately 18.2 million people. At the end of 2008, Clearwire had approximately 475,000 wireless broadband subscribers. In its newest markets, Portland, OR and Baltimore, MD, Clearwire utilizes mobile WiMAX technology that enables the company to offer mobile and fixed communications over a

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<sup>2</sup> See *Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*; *Review of Regulatory Requirements for Incumbent LEC Broadband Telecommunications Services*; *Computer III Further Remand Proceedings: Bell Operating Company Provision of Enhanced Services*; *1998 Biennial Regulatory Review — Review of Computer III and ONA Safeguards and Requirements*; *Inquiry Concerning High-Speed Access to the Internet Over Cable and Other Facilities*; *Internet Over Cable Declaratory Ruling Appropriate Regulatory Treatment for Broadband Access to the Internet Over Cable Facilities*, Internet Policy Statement, CC Docket Nos. 02-33, 01-337, 98-10, 95-20, GN Docket No. 00-185, CS Docket No. 02-52, 20 FCC Rcd 14986 (2005) (*Internet Policy Statement*).

<sup>3</sup> See SEC Form 10-K, Clearwire Corp/DE-N/A, filed March 26, 2009 (period: Dec. 31, 2008) providing a comprehensive overview of the company for the past year.

single wireless network at speeds that are multiple times faster than today's 3G wireless networks and that offer a competitive alternative to wireline broadband offerings.<sup>4</sup>

Because WiMAX technology is based on an open standard technology platform, device manufacturers are free to design various WiMAX compliant devices that can be accommodated on the Clearwire network. A proprietary system does not permit this type of flexibility. With embedded WiMAX chipsets in laptops, phones, PDAs, mobile Internet devices and consumer electronic equipment, mobile WiMAX technology will allow users to wirelessly access a range of multimedia applications, such as live videoconferencing, video games, large data files and more—anywhere in the coverage area. In addition to these consumer-friendly applications, a nationwide WiMAX network also offers unmatched utility to the public safety community, proponents of “smartgrid” technology, educators and telemedicine applications.

## **II. DISCUSSION**

### **A. The Definitions Employed by the Commission Must Separately Account for Mobile Wireless Broadband Services**

Recent research forecasts that globally, mobile data traffic will double every year through 2013, increasing 66 times between 2008 and 2013.<sup>5</sup> It is also predicted that mobile data traffic will grow from 1 petabyte per month to 1 exabyte per month in half the time it took fixed data traffic to do so.<sup>6</sup> Currently in North America, 4.5 percent of broadband connections are over mobile broadband technologies, but that number is expected to grow 43 percent each year to

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<sup>4</sup> The mobile WiMAX standard is also known as the IEEE mobile Worldwide Interoperability of Microwave Access 802.16e-2005.

<sup>5</sup> “Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update,” White Paper (January 29, 2009) at 1 (available at [http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white\\_paper\\_c11-520862.html](http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html)).

<sup>6</sup> *See id.*

reach 35 million subscribers by the end of 2014.<sup>7</sup> By 2020, the mobile device will be the primary connection tool to the Internet for most people in the world.<sup>8</sup>

To ensure that the United States is in a position to lead the world to the new level of mobile computing represented by these projections, the National Broadband Plan must recognize and promote the mobile technologies that are currently driving broadband innovation, and use.<sup>9</sup> As a starting point, the Commission's definitions of "broadband", "unserved" and "underserved" must separately account for fixed wireline/wireless service and mobile wireless services.<sup>10</sup> Fixed and mobile broadband are two separate services providing different constituents and needs. Because mobile wireless broadband offers important capabilities that fixed services lack—ranging from the critical ability of public safety personnel to access databases while on patrol to the convenience of sharing pictures with family while on vacation—the Commission should separately define mobile broadband and assess whether an area or population is "unserved" or "underserved" with regard to the availability of both fixed wireline/wireless and mobile wireless.

In establishing a definition for mobile broadband, the Commission should use appropriate speed thresholds to define mobile broadband and recognize that wireless technology dictates that upload and download speeds are asymmetric.<sup>11</sup> For example, the 4G mobile WiMAX networks

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<sup>7</sup> See "mocoNews - 11.6 Percent Of European Broadband Connections Are Mobile," (May 28, 2009) (available at <http://www.washingtonpost.com/wp-dyn/content/article/2009/05/28/AR2009052802974.html>).

<sup>8</sup> See Pew/Internet, Pew Internet & American Life Project, "The Future of The Internet III" (December 14, 2008) at 2, 5, 6, 25, 28 (available at <http://www.pewinternet.org/Reports/2008/The-Future-of-the-Internet-III.aspx>).

<sup>9</sup> See Comments filed in Docket No. 090309298-9299-01 (*American Recovery and Reinvestment Act of 2009 Broadband Initiatives, Joint Request for Information*) by Sprint (April 13, 2009) at 5.

<sup>10</sup> See NOI at ¶ 19.

<sup>11</sup> See *id.*

being deployed by Clearwire today are capable of delivering 6.0 mbps download and 1.5 mbps upload. At a minimum, advanced mobile broadband should be defined as an average actual speed of 3.0 download and 768 kbps upload per end user during peak hours. Areas where fixed broadband or earlier generations of mobile broadband are available, but advanced mobile broadband meeting this minimum speed threshold does not exist, should be considered underserved and targeted for improvement.

## **B. Promoting the Deployment of Mobile Broadband Infrastructure**

The National Broadband Plan should establish a game plan that includes a list of FCC priorities for instituting steps that help reduce the cost of market entry, network deployment and continuing operations. This includes recognizing the critical role of “middle mile” or backhaul facilities to any successful network deployment and correcting the anomalies that plague the middle mile marketplace today. The Commission also should examine the status of existing cell siting and pole attachment regulations and include all broadband providers in efforts to streamline these cumbersome processes at the state and local level.

### **1. Reforming the “Middle Mile” Market is Critical to Broadband Deployment**

Clearwire is in the process of building-out a new, fourth-generation (4G) mobile wireless broadband network and a critical component to making 4G broadband services widely available are the “middle mile” facilities that link Clearwire’s cell sites, base stations and switches. Indeed, “middle mile” or backhaul facilities are an essential input for the construction of virtually all telecommunications networks – broadband, wireless and large businesses. Clearwire urges the Commission to address in its National Broadband Plan the ever increasing reliance of



mobile broadband Internet access providers upon special access and other middle mile and backhaul services and complete the work it began in its *Special Access Reform*<sup>12</sup> proceeding.

As noted in comments filed in the Commission's *Special Access Reform* proceeding, consumers will ultimately pay a premium for wireless broadband services if backhaul and middle mile services do not become available to mobile broadband providers at competitive rates.<sup>13</sup> Unfortunately, as noted in reports by the Government Accountability Office (GAO) and the National Regulatory Research Institute (NRRI), the predominant providers of middle mile special access facilities are the incumbent LECs, particularly AT&T and Verizon.<sup>14</sup> According to data collected by the Commission, the incumbent LECs' share of the wholesale special access market was 92.1% in 2006.<sup>15</sup> The higher the costs of building and maintaining a competitive wireless broadband network—one that will compete head-to-head with the planned 4G broadband networks of AT&T and Verizon—the more consumers will be forced to pay to obtain the new and innovative wireless broadband services. As recently noted by commenters in the Commission's Rural Broadband Strategy proceeding: a solution for exorbitant backhaul costs also must be found if rural areas are to receive broadband service.<sup>16</sup>

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<sup>12</sup> See Public Notice, "Parties Asked to Refresh Record in the *Special Access Notice of Proposed Rulemaking*," Public Notice, WC Docket No 05-25, FCC 07-123 (rel. July 9, 2007); *Special Access Rates for Price Cap Local Exchange Carriers*, Order and Notice of Proposed Rulemaking, WC Docket No. 05-25, 20 FCC Rcd 1994 (2005) ("*Special Access Reform*").

<sup>13</sup> See comments filed in FCC WC Docket No. 05-25 (*Special Access Rates for Price Cap Local Exchange Carriers*) by Sprint (August 8, 2007) at 33 and T-Mobile (August 8, 2007) at 8.

<sup>14</sup> See GAO Report to the Chairman, Committee on Government Reform, U.S. House of Representatives, *FCC Needs to Improve its Ability to Monitor and Determine the Extent of Competition in Dedicated Special Access Service*, GAO Report No. GAO-07-80 (Nov. 2006); NRRI, *Competitive Issues in Special Access Market*, (Jan. 2009) at iii.

<sup>15</sup> FCC Monitoring Report Table 1.5, line 305 using data compiled from revenue data reported on FCC Form 499-A.

<sup>16</sup> See comments filed in FCC Docket No. 09-29 (*Rural Broadband Strategy*) by DigitalBridge Communications Corp. (March 25, 2009) at 8-9; Organization for the Promotion

The incumbent LECs' dominance in the special access marketplace, when coupled with their position as formidable competitors in the 4G marketplace, threatens Congress' ambitious plans for ubiquitous broadband and cannot be ignored. AT&T and Verizon have an obvious incentive to maintain excessive middle mile special access costs of their wireless and broadband rivals. Given these incentives, the Commission should consider establishing a "non-discrimination" obligation for dominant special access providers that prohibits them from engaging in anti-competitive conduct, including anti-competitive pricing that has the effect of benefitting their broadband businesses by disadvantaging competitors. Special access reform should be a goal of the National Broadband Plan and the Commission should complete its pending special access rulemaking proceeding by reforming the anticompetitive prices and practices that permeate the record of that docket. Effective special access reform will accelerate broadband deployment, generate economic growth and expand broadband availability.

## **2. The National Plan Should Promote Streamlined Cell Siting and Tower Attachment Processes for All Broadband Networks**

The explosive growth of both the Internet and the market for broadband access has made it difficult for regulatory regimes originally structured around traditional voice telephony to keep pace. Because broadband networks do not fit neatly existing definitions of telecommunications services, current regulatory structures do not promote broadband infrastructure build-out on par with other types of networks. The Commission can address this disparity by ensuring that its regulations are applied with an eye towards regulatory parity for *all* broadband providers.

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and Advancement of Small Telecommunications Companies (March 25, 2009) at 8; *see also* Comments filed in FCC GN Docket No. 09-40 (*Broadband Provisions of the Recovery Act*) by Sprint (April 13, 2009) at 11.

For instance, cumbersome state and local cell siting processes have proven to be a roadblock for all licensees, not just those denominated as Cellular Mobile Radio Service (“CMRS”) providers. Wireless broadband network providers, such as Clearwire, also must quickly obtain cell sites to maintain their ambitious deployment schedules for rolling out 4G services to the public and to meet the Commission’s 2011 substantial service deadline for its spectrum.<sup>17</sup> Although Congress, in section 332(c)(7) of the Telecommunications Act of 1996, adopted provisions designed to streamline burdensome state and local tower siting processes, Clearwire has struggled to gain recognition by state and local authorities of these basic statutory protections.

In July 2008, CTIA – The Wireless Association (“CTIA”), filed an extensive Petition for Declaratory Ruling asking that the Commission clarify “[l]ingering ambiguities in several key statutory provisions that have been exploited by a subset of zoning authorities, substantially impeding wireless buildout.”<sup>18</sup> CTIA asked the Commission to resolve open questions regarding the time frames in which zoning authorities must act on wireless facilities-siting requests, the importance of competitive entry by multiple providers in each market, and the impropriety of unduly burdensome requirements imposed on wireless providers but not on other entities.<sup>19</sup> CTIA’s petition also asks the Commission to ensure that state and local zoning processes are not a barrier to nationwide mobile broadband deployment. The Petition argues that in many areas of

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<sup>17</sup> See *Amendment of Parts 1, 21, 73, 74 and 101 of the Commission’s Rules to Facilitate the Provision of Fixed and Mobile Broadband Access, Educational and Other Advanced Services in the 2150-2162 and 2500-2690 MHz Bands*, Third Memorandum Opinion and Order and Second Report and Order, WT Docket No. 03-66, 21 FCC Rcd 5606 (2006) at ¶¶ 5, 303.

<sup>18</sup> See Petition to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review and to Preempt Under Section 253 State and Local Ordinances that Classify All Wireless Siting Proposals as Requiring a Variance, WT Docket No. 08-165, Petition for Declaratory Ruling (filed July 11, 2008) (“Tower Shot Clock Petition”).

<sup>19</sup> See *id.* at ii.

the country, state and local authorities have mired wireless broadband facilities build-out in unnecessary and counterproductive delay, and that a “shot clock” requirement should be placed on these entities’ facilities-siting approval processes.<sup>20</sup>

Clearwire urges the Commission to grant CTIA’s recent facilities-siting Tower Shot Clock Petition and, in addition to the clarifications requested by CTIA, confirm that all mobile broadband providers are entitled to streamlined zoning approval processes pursuant to Section 332(c)(7).<sup>21</sup> The Commission should make explicit that the “functionally equivalent services” language in section 332(c)(7)(B)(I) extends the statute’s protections and the Commission’s regulations implementing the statute to all mobile broadband access service providers, not just those who are also traditional CMRS providers.<sup>22</sup>

Clearwire also urges the Commission to take an expansive view of its authority to extend the protections of Section 224 governing pole attachments to wireless broadband providers.<sup>23</sup> As with cell siting, timely network deployment depends on the quick, successful negotiation of rights to attach to the utility poles of power and telephone companies at regulated rates. In its *Wireless Broadband Declaratory Ruling*, the Commission clarified that where a wireless service provider uses the same pole attachments to provide both telecommunications and wireless broadband Internet access services, section 224 would apply.<sup>24</sup> The Commission also stated, that “[a]lthough we do not reach the question of the applicability of section 224 when an entity is

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<sup>20</sup> See Tower Shot Clock Petition at ii.

<sup>21</sup> See Section 332(c)(7) of the Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996 Act) (amending the Communications Act of 1934) (“the Act”).

<sup>22</sup> See 47 U.S.C § 332(c)(7)(B)(I).

<sup>23</sup> See 47 U.S.C § 224.

<sup>24</sup> See *Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, Declaratory Ruling, WT Docket No. 07-53, 22 FCC Rcd 5901 (2007) (“*Wireless Broadband Declaratory Ruling*”) at ¶ 60.

solely providing wireless broadband Internet access services, we note that that issue may be addressed in other pending Commission proceedings.”<sup>25</sup>

Clearwire has found this lingering ambiguity regarding the treatment under section 224 of wireless broadband network providers has prompted some utilities to hesitate to negotiate attachment agreements because they assert that Clearwire does not offer co-mingled broadband and telecommunications services.<sup>26</sup> The competitive disadvantage that flows from this decision is obvious. It works to the detriment of both consumers and competition because broadband network providers deploy valuable mobile wireless voice and broadband Internet access services to consumers in direct competition to service providers that are unambiguously entitled to invoke section 224. To address this shortcoming, Clearwire urges the Commission close the loop regarding the application of section 224 and explicitly enunciate that its protections apply generally to wireless broadband service providers. For example, in its *Pole Attachments NPRM*, the Commission tentatively concluded that “*all categories* [emphasis added] of providers should pay the same pole attachment rate . . . the critical need to create even-handed treatment and incentives for broadband deployment would warrant the adoption of a uniform rate for all pole attachments used for broadband Internet access service.”<sup>27</sup> The Pole Attachment proceeding or one dealing with broadband more generally may provide the Commission with the vehicle for issuing this necessary clarification regarding the scope of section 224.<sup>28</sup>

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<sup>25</sup> *Wireless Broadband Declaratory Ruling* at ¶ 62.

<sup>26</sup> Section 224 of the Act states that “[t]he term ‘pole attachment’ means any attachment by a cable television system or provider of telecommunications service to a pole, duct, conduit, or right-of-way owned or controlled by a utility.” 47 U.S.C § 224(a)(4).

<sup>27</sup> *Implementation of Section 224 of the Act; Amendment of the Commission’s Rules and Policies Governing Pole Attachments*, Notice of Proposed Rulemaking, WC Docket No. 07-245, 22 FCC Rcd 20195 (2007) at ¶ 36.

<sup>28</sup> *See Wireless Broadband Declaratory Ruling* at ¶ 62.

### **C. A Commitment to Open Networks Should Factor Into the National Broadband Plan**

The Commission asks commenters to address the value of open networks. Clearwire has built its network based upon an open standard and has committed to adhering to the four principles set forth in the Commission's *Internet Policy Statement* that were intended by the Commission "to ensure that broadband networks are widely deployed, open, affordable, and accessible to all consumers."<sup>29</sup> Open networks permit consumers to download and use any device or application, content or services they desire, subject to reasonable network management practices and law enforcement and public safety considerations. The open network model permits customers to purchase a variety of devices through any number of consumer electronics distribution channels, connect to the WiMAX network, activate the devices, and select from a variety of rate plans without having to purchase devices or applications directly from the service provider. Clearwire believes providing this type of customer-driven choice will drive innovation and investment in the development of broadband devices and applications beyond that achievable by closed proprietary networks and should be a component of the National Broadband Plan.

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<sup>29</sup> *Internet Policy Statement* at ¶ 4.

## **CONCLUSION**

Clearwire respectfully submits the foregoing comments and asks that the Commission consider the views expressed herein.

Respectfully submitted,

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